Editorials

Shifting Sands in Science

THERE ARE MANY SIGNS of a lessening of public faith in science. This disturbs scientists—and physicians to the extent that they too are scientists. There is a new scrutiny of scientific research, how it is carried out, how it is reviewed, and how it is reported. There are suspicions that some scientific research may not have been as objective as had been thought, that there may have been sloppy performance and even fraud that has gone undetected, and that bias and special interests may sometimes have unduly influenced the process or the outcome. But this is not all. There are increasingly aggressive elements in the public that for one reason or another seek to impede or block scientific research in universities and elsewhere through court actions. Sometimes they even resort to overt vandalism.

These are relatively recent phenomena. One has only to look back as far as World War II, when physical science and medical science came into the public view as never before. Through the Manhattan Project, physical science dramatically and abruptly ended that war with just two atom bombs. And during the war there were unprecedented advances in medicine and surgery and new approaches to the care of mental stress. The public was impressed. It seemed that modern science could do almost anything. Following the war enormous amounts of money were invested in nuclear and biomedical research, and very great progress was made. But the public expectations for a safe and healthy world were not realized.

It turned out that harm as well as good can come of scientific research, whether in physics or biomedical science. It also turned out that the basic knowledge upon which modern science is built was not as firm or infallible as the public had assumed. It was not clear whether the physical world was made of particles, waves, or strings, and in medical science and health care the advice or recommendations seemed to change almost too often to be trusted as truly scientific or authoritative. The methods and processes of scientific research were obviously not well understood. Perhaps these uncertainties, together with a growing realization that unpredictable harm as well as unpredictable good can come from many kinds of scientific research, are what has led to a growing uneasiness or discomfort on the part of many with science. In any case, and for whatever reason, it is clear that science and the methods of science are coming under increasing scrutiny.

The scrutiny is, of course, human scrutiny, usually by nonscientists, and one of the places it is clearly evident is in medicine and health care, where it begins with patients, goes on to the third parties in health care, then to the public, and finally to society itself. Many—perhaps most—patients have begun to play a more active role in medical decisions about their own care. Some want to direct their own care within the medical system. Others reject the medical system entirely and seek care and solace elsewhere. Third party payers scrutinize the health care given by health professionals and others and make judgments according to their own interpretations. The public, confused by the messages it gets from physicians and medical scientists, is often insecure. Society seems to have decided that medicine and health care are too important to be left to the professionals. Things are very different from the time, not so long ago, when people were comfortable with the idea that "the doctor knows best."

What is to be gleaned from all this? Perhaps medical science, and all of science for that matter, is not the rock many of us were taught to believe it was—a solid rock upon which human health and medical practice are built. Rather, it is more like the shifting sands, which may have different configurations with changing tides and changing winds. Shifting sands are not usually all that stable or trustworthy. Perhaps this is somehow sensed by patients and the public who, almost unconsciously, it seems, may be questioning or even rejecting the authority of physicians and a profession that claim to rely almost entirely on what they know or think they know of medical science. All of this is not to denigrate science or medical science, but rather to point out that there is a human component in both medicine and society that tends to examine and even to question scientists' authority. It is paradoxical that while science has made modern medicine the technologic wonder that it is, science may also be an important underlying cause of much of the criticism and distrust of the medical profession that we have today. Fortunately for physicians, their eggs are not all in one basket. They have more to give to help their patients than just their science. Perhaps more easily understood and appreciated by patients and the public are the caring and care physicians can give to those who seek their help. Caring and care have been known to be curative, as well.

MSMW

Controlling Penicillinase-Producing *Neisseria gonorrhoeae*— Does It Really Matter Anymore?

IN THIS ISSUE of THE WESTERN JOURNAL OF MEDICINE, Kenneth Kizer, MD, and his colleagues at the California Department of Health Services report on a program to control a major extended outbreak of penicillinase-producing *Neisseria gonorrhoeae* (PPNG) and make certain recommendations for clinicians and local public health officials. They attribute a reduction of 59% in the reported incidence of PPNG to their efforts.

Although Kizer and co-workers undoubtedly have given the PPNG epidemic their "best shot," the article unintentionally raises some crucial policy questions about the value of categorical gonorrhea control measures, especially those with a focus no wider than a β-lactamase-producing plasmid, during a worldwide acquired immunodeficiency syndrome (AIDS) pandemic. With this in mind, I would like to take advantage of my editorial prerogative to comment on the origins and current status of gonococcal antimicrobial resistance in the United States, the implications they hold for California's PPNG control recommendations, and the need to better coordinate control programs for all sexually transmitted diseases including human immunodeficiency virus (HIV) infections.

In 1986 the Centers for Disease Control established the long-needed Gonococcal Isolate Surveillance Project to characterize the current resistance patterns in geographic regions of the country, monitor trends in these resistance